DECISION NOTICE
AND
FINDING OF NO SIGNIFICANT IMPACT

SUSTAINED REDUCTION PLAN
FOR
NON-NATIVE WILD HOGS
WITHIN
VIRGIN ISLANDS NATIONAL PARK

U. S. D. I. National Park Service
Virgin Islands National Park
St. John, U. S. Virgin Islands

INTRODUCTION

This Decision Notice (DN) and Finding of No Significant Impact (FONSI) documents the decision of the National Park Service (NPS) to adopt a program for the sustained reduction of non-native wild hogs within Virgin Islands National Park (VINP) and the determination that no significant impacts on the human environment are associated with that decision.

The FONSI is based upon a Draft Environmental Assessment (EA) released in October 2002, and comments of agencies and the public on the EA. The purpose of the EA was to evaluate the effects of a proposed sustained reduction program for non-native wild hogs within VINP. The EA has been prepared in accordance with the National Environmental Policy Act (NEPA) and NPS policy and guidelines.

The NPS decision is to select Alternative 2 in the Final EA.

PUBLIC INVOLVEMENT

Implementation of this project could affect Park visitors, commercial operators, island residents, the integrity of natural and cultural resources, and the status of listed threatened and endangered species. Therefore, public participation has been a critical element in its preparation. The public involvement process for the EA provided three distinct phases of public information on and review of plan elements: (1) scoping of issues to be analyzed in detail in the EA, (2) Draft EA, and (3) Final EA.

A Draft EA was released for 42 days of public review on October 21, 2002, with a press briefing conducted in conjunction with its release. Public review opportunities included:

- Distribution of more than 30 copies of the Draft EA.

- Developing news stories describing the effects of exotic animals on the Park's wildlife, flora and cultural resources in the Park's and several local newspapers and radio stations.
- Briefings with NPS staff, Friends of VINP, staff of the U.S. Virgin Islands (USVI) Department of Planning and Natural Resources, USVI's Department of Economic Development and Agriculture (VIDEDA), and other key community leaders and interest groups.
- Posting of the Draft and Final EA and newsletter summary on the web sites for VINP and the Friends of VINP.

One comment was received during this 42-day public review period. Issues raised include: general comments of support; boundary fence installation and maintenance; use of hunting dogs to locate animals; and use of neck snares to trap animals.

Based upon comments on the Draft EA, additional analysis was conducted and modifications were made to the Proposed Action. NPS's responses are provided in an errata sheet to this DN/FONSI.

ALTERNATIVES ANALYZED

Range of Alternatives

Two alternatives, including one "No Action, Continue Current Level of Management" alternative (1) and the agency's one Preferred Alternative (2), were analyzed in detail in the EA. These alternatives were developed based on issues raised in scoping, public comment, and the VINP's purpose and significance. The EA discloses the potential environmental consequences that may result from implementation of various alternative management strategies. Comments received during public review of the Draft EA were considered in preparation of a Final EA and this FONSI/DN.

Alternative 1. No Action, Continue Current Level of Management. Under Alternative 1, the "No Action" alternative, non-native wild hogs would continue to flourish essentially unabated throughout VINP. No reduction efforts would be used on the wild hogs within the boundaries of the Park. Their population numbers would continue to rise and fall with the seasonal and long-term availability of food resources. Hogs would continue to adversely affect island vegetation and wildlife including endemic and federally- and territorially listed plant and animal species.

If left unchecked, hog populations would be expected to increase throughout the Park. In 1998, hogs were found in only two watersheds, Reef and Lameshur. During the next three years, they migrated into the Cinnamon, Maho and Caneel watersheds. From these new locations, hogs would readily move into adjacent watersheds, causing irreparable damage to sensitive natural and cultural resources. Hogs also pose serious threats to public health and safety, and of residents and visitors to the Park.

The NPS would continue to use animal-proof trash receptacles, dumpsters, and buildings at campgrounds, day-use sites, concession areas, Park overlooks, and employee housing areas, and collect trash on a regular basis. In 2001, VINP installed about 100 animal-proof trash containers (at a cost of about $75,000) at most sites except the major concession operations at Trunk Bay and Cinnamon Bay to collect both refuse and recyclables. In fiscal year 2002, the NPS requested $30,000 in funding to purchase and

install an additional 20 animal-proof trash containers at major concession locations (eight at Trunk Bay and twelve at Cinnamon Bay) to collect both refuse and recyclables.

Alternative 2. Reduce Wild Hogs Within VINP and Sustain a Near-Zero Population: Preferred Alternative. Under Alternative 2, the Preferred Alternative, the NPS, in cooperation with the U.S. Department of Agriculture's Animal Plant Health Inspection Service / Wildlife Services Division and the VIDEDA will conduct a site-specific non-native wild hog population reduction program using a combination of trapping, shooting and fencing within VINP. The goal will be to reduce substantially the hog population within VINP and to sustain a near-zero population. This will be accomplished through a three-phase approach:

Phase I will require approximately one year to complete once environmental compliance is met. The NPS will hire or contract personnel, purchase supplies and equipment, establish adequate communications, construct live-traps, possibly fence especially vulnerable long-term monitoring plots, and begin selective fencing near limited areas of the boundary where hogs can easily reenter the Park (Herman Farm, L' Esperance and Catherineberg). Because the origin of hogs into the four affected watersheds is well established from hogs constantly roaming portions of Centerline Road, selective fencing and possibly gating will prevent future encroachments from this area.

Phase II, which will most likely be simultaneous with Phase I, envisions a relatively fast hog population reduction campaign for each watershed. Due to logistical factors, watersheds may be paired and worked simultaneously, e.g. Maho -- Cinnamon and Reef -- Lameshur. Phase II may take approximately 2 to 3 years. Baiting in conjunction with snares, and single-capture and corral traps will be employed systematically throughout each watershed. Areas of high hog concentrations will be targeted first. Hog movement observations will determine where the collection efforts must then be focused. Biological and ecological data will be recorded from each collected animal. These data, field observation records, and scat and track analysis will allow workers to establish a baseline from which to estimate and measure group population dynamics.

Phase III will be an indefinite period of searching the Park for hog signs. If hog sign are detected, NPS Law Enforcement Rangers or certified Resources Management personnel will either trap or humanely dispatch the animals or both as described in Phase II. As hogs migrate into the Park from private lands, they will be tracked and reduced. Long-term ecological monitoring to assess ecosystem change due to hog reduction will continue indefinitely because it is unlikely that we can fully eradicate this animal from within the Park. Currently on St. John, many hogs are not fenced, so individual animals periodically wander into National Park lands and can establish feral populations. Periodic efforts will prevent reestablishment of feral populations.

Monitoring programs will focus on the disease status of wild hogs and long-term impacts to vegetation. The presence and status of disease organisms in wild hogs should be investigated every five years. Fruiting cycle surveys will also be used to monitor food availability and distribution. Results of these surveys will be used to ascertain hog movement and to aid in developing control strategies. Long-term monitoring involves the maintenance of permanent hog exclosures in areas containing long-term vegetation data.

Environmentally Preferable Alternative

In accordance with Council on Environmental Quality (CEQ) regulations, Alternative 2 is identified as the environmentally preferred alternative. The environmentally preferred alternative is defined by CEQ as the alternative " that would promote the national environmental policy as expressed in NEPA's Section 101. Generally, this means the alternative that causes the least damage or most benefit to the biological and physical environment and best protects, preserves and enhances historic, cultural and natural resources" (*46 CFR 18027*, *Forty Most Asked Questions Concerning CEQ's NEPA Regulations*).

As considered in this EA, Alternative 2: Reduce wild hogs within VINP and sustain a near-zero population, is the environmentally preferred alternative due to its restoration of natural conditions throughout the Park. Of the alternatives analyzed, Alternative 2 best responds to the NPS mandate to preserve and protect unimpaired the resources for which VINP was established and allows for appropriate use and enjoyment by the public. Potential adverse effects on natural and cultural resources will be reduced over those in the no action alternative. By reducing the population of non-native hogs inside the Park, adverse impacts to visitors, residents and natural and cultural resources will decrease. The proposed reduction program will produce minimal or no damage to Park resources or threats to visitor and employee safety. Collectively, hog populations pose a very large threat to the native natural resources, long-term resource management programs of the Park, and visitor health and safety.

The Proposed Action will cause the least damage to the biological and physical environment and best protect, preserve and enhance the Park's historic, cultural and natural resources. Consequently, Alternative 2 will best fulfill NPS's statutory mission and responsibilities; best meet the purpose and need for a Sustained Reduction Plan for Non-native Wild Hogs; best respond to the issues identified through public and agency scoping; and achieve the best balance of environmental, visitor experience, public safety, economic and other factors.

DECISION AND RATIONALE

Rationale

People have accidentally or intentionally introduced hundreds of non-native species into natural communities worldwide, and while many die out, some persist and become pests. It is now widely accepted that the current rates of species extinctions are dramatically higher than background rates; most current extinctions can be directly attributed to human activity; and for ethical, cultural, aesthetic and economic reasons, the current extinction rate is cause for considerable concern. Human-caused extinctions can be roughly divided into four broad categories: non-sustainable use of resources, habitat destruction, pollution, and introduced non-native species (Soule 1990).

Results of the first three categories are often acute and can directly affect human and native wildlife welfare on an observable time scale. The human-related impacts have made them the focus of public environmental concern. The introduction of non-native species has received less publicity and professional attention; however, introduced species are responsible for 39% of all recorded animal extinctions since 1600 for which a cause could be attributed (Treshy and Croll 1994). Thus, some impacts of introduced species are irreversible and at least as devastating as the other categories. Once established, introduced species often become permanent in ecological time unless intentionally removed.

Native wildlife in island ecosystems are particularly vulnerable. Of the 484 recorded animal extinctions since 1600, 75% have been island endemics. Introduced species were completely or partially responsible for 67% of these extinctions (based on the 147 island species for which the cause of extinction is known).

With the exception of bats, the VINP is presently inhabited by numerous species of non-native mammals that have produced severe impacts on many indigenous species of plants and animals and threats to visitor safety. Feral or wild mammals include the white-tailed deer, donkey, wild hog, domestic goat, domestic cow, domestic sheep, European boar, West Indian mongoose, tree rat, Norway rat, domestic cat, domestic dog and house mouse. Some of these species also threaten visitor experience and safety. Increasing populations of these species are seriously affecting native species of plants and animals. Additionally, introduced species of birds, amphibians, reptiles, insects and plants are affecting the fragile environment.

Numbers of wildlife are lost each year to relatively small non-native hog populations. Small islands typically have both smaller resident wildlife populations and lower species diversity. This is particularly true on very small and highly fragmented islands such as St. John, because most negative impacts are concentrated and accelerated when compared with similar impacts to a larger landmass. Therefore, the cumulative impacts associated with these increasing wildlife losses are substantial.

NPS is mandated to eliminate animals that are determined to be injurious to native flora and fauna. Management of populations of exotic plant and animal species, up to and including eradication, will be undertaken whenever such species threaten Park resources or public health and safety. High priority will be given to the management of exotic species that have a substantial impact on Park resources and that can be expected to be successfully controlled (NPS Natural Resources Management Guideline 1991, Chapter 2, Page 286; and NPS Management Policies 2001, Page 37).

A single, rapid population reduction effort is necessary to reduce the present populations to manageable levels. Because additional non-native hogs can enter the Park from adjacent lands, methods of limiting access must be established. Park areas must be monitored to ensure the program goals are achieved.

Eradication is impractical and unlikely as a feasible alternative due to the size of St. John and the large number of inholdings. Therefore, efforts will focus on sustained control of the non-native hog populations and a concomitant reduction in their impacts on natural and cultural resources. To achieve this goal, a combination of techniques will be initiated in three phases. In the first phase, administration, infrastructure acquisition, and fencing will be employed. In phase two, techniques will be used to quickly reduce populations to acceptable levels throughout the Park. Phase three will be to monitor and remove individuals that are found in the Park.

Decision

The NPS decision is to select Alternative 2 as described in the Final EA. The NPS in cooperation with the U.S. Department of Agriculture's Animal Plant Health Inspection Service / Wildlife Services Division, and the Virgin Islands Department of Economic Development and Agriculture (VIDEDA) will conduct a site-specific non-native wild hog population reduction program using a combination of trapping, shooting and fencing within VINP. The goal will be to substantially reduce the hog population within the Park and to sustain a near-zero population. This will be accomplished through a three-phased approach detailed below (a complete description of the implementation plan is found on pages 18 to 23 of the EA).

Phase I – Administration, Infrastructure Acquisition and Fencing *(Approximately 1 year)*

This phase will require approximately one year to complete once environmental compliance is met. The NPS will hire or contract with personnel, purchase supplies and equipment, establish adequate communications, construct live-traps, fence especially vulnerable long-term monitoring plots and determine locations for selective fencing near limited areas of the boundary where hogs can easily reenter the Park. Because the origin of hogs into the four affected watersheds is well established from hogs constantly roaming portions of Centerline Road, selective fencing and possibly gating will prevent future encroachments from this area.

Consensus building has been established during the NEPA process and will continue into subsequent phases. A strong bridge will be established and strengthened between the NPS, USDA-Wildlife Services and VIDEDA, the Friends of VINP, the St. John Community Foundation, the VI Department of Planning and Natural Resources, the St. John Rotary Club, and the Island Administrator.

Local non-government organizations (NGO's) with guidance and assistance from the NPS and USDA will develop a comprehensive community outreach strategy. This outreach will serve to inform, advise and educate the St. John community and island visitors about hogs and the ecological damage a small group of hogs can inflict on a small, remote subtropical island. The community will be advised of the global problems germane to introduced hogs as well as the potential economic loss to the USVI if no action is taken to reduce their population.

Phase II – Collection Using Baits, Traps, Dogs and Contract Hunters (2 to 3 years)

Initial scoping and observation conducted in Phase I and before will allow program coordinators to determine where to concentrate their resources. Several methods or techniques may occur simultaneously, but new methods will be used later in Phase II, as more hogs become trap-shy. At that point, radio-telemetry and baying dogs may be employed to collect additional hogs. Because hogs are highly social animals, a hog equipped with a radio transmitter can lead field personnel to remote locations where animals congregate. As hogs become trap shy and less common, contract hunters (USDA APHIS) may use bait stations to eliminate these individuals. After a hog is collected using a firearm, carcasses will be disposed of in a shallow grave after being treated with lime to accelerate the rate of decomposition in a warm, moist subtropical environment (please see Final Disposition (pages 23) and Use of By-products (page 24) in the Final EA). Fence installation will be completed in areas designated for selective fencing in Phase I while minimizing any damage to cultural sites and structures.

A relatively fast initial hog population reduction campaign is envisioned for each watershed. Due to logistical factors, watersheds may be paired and worked simultaneously, e.g. Maho -- Cinnamon and Reef -- Lameshur. Phase II will last approximately 2 to 3 years. Baiting in conjunction with snares, and single-capture and corral traps will be employed systematically throughout each watershed. Areas of high hog concentrations will be targeted first. Hog movements will determine where the collection efforts must be focused. Biological and ecological data will be recorded from each collected animal. These data, along with field observation records and scat and track analysis will allow workers to establish a baseline from which to estimate and measure group population dynamics.

Phase III – Monitoring for Remnant Wild Hogs, Periodic Hog Removal, Education, Record Keeping, and Fence Maintenance (Ongoing, Indefinitely)

This phase will be an indefinite period of searching the Park for hog signs. If hog signs are detected, NPS Law Enforcement Rangers or certified Resources Management personnel will either trap or humanely dispatch the animals or both as described in Phase II. As hogs migrate into the Park from private lands, they will be tracked and reduced. Long-term ecological monitoring to assess ecosystem change due to hog reduction will continue indefinitely.

Monitoring for hog signs will continue throughout the life of the program. The primary purpose of the monitoring is to determine the presence or absence of hogs. In addition to historical locations of high population densities, water sources and fruiting events, which are preferred habitat for hogs, will be a focus of the monitoring efforts,

The partnerships established during the NEPA process in Phase I will be supported, maintained and revived as key personnel change. Park biological technicians will monitor both the "containment" (selective fencing) and "research exclosures" every 2 months. These technicians will also monitor the four watersheds annually using transects and quadrants for hog sign. Monitoring will be particularly intensive in areas that previously had the highest hog concentration, as well as the bait station areas. Detailed records will be documented from these areas and extend into an Excel exotic mammal database.

Monitoring programs will focus on the disease status of wild hogs and long-term impacts to vegetation. The presence and status of disease organisms in wild hogs should be investigated every five years. Fruiting cycle surveys will also be used to monitor food availability and distribution. Results of these surveys will be used to ascertain hog movement and to aid in developing control strategies. Long-term monitoring involves the maintenance of permanent hog exclosures in areas containing long-term vegetation data.

NPS personnel using one or more of the previously described techniques will accomplish periodic removal of hogs. NPS law enforcement and interpretation rangers, maintenance and resources management personnel performing routine fieldwork will be provided with general "Exotic Species Observation Sheets." These people will be instructed on the animals of particular concern and importance of reporting any suspected sightings, sign or activity, and be routinely notified by resources management personnel to submit any documented sighting as soon as possible. The Resources Management Division will develop and maintain an exotic mammal database to maintain and analyze the data.

The timeframe for implementing each phase of the sustained reduction program will be: Phase I and Phase II concurrent for the next twelve to twenty-four months starting in April or May 2003; and Phase III, monitor the populations and other implemented changes, such as habitat and food, indefinitely. The educational component and continued partnerships must be sustained indefinitely.

ENVIRONMENTAL CONSEQUENCES

The potential consequences of the Proposed Action (Alternative 2) and alternatives are analyzed in detail in the EA and key impacts are summarized below:

Effects to Threatened and Endangered Species

The NPS is required to identify and promote the conservation of all federally-listed threatened, endangered, or candidate species within Park boundaries and their critical habitats. The NPS is also required to protect all state- and locally-listed threatened, endangered, rare, declining, sensitive, or candidate species that are native to and present in the national parks, and their critical habitats (NPS Management Policies 2001).

The sustained reduction program will greatly decrease population levels of one non-native animal (wild hogs) that prey upon numerous plant and wildlife species living on St. John. The listed species include the endangered St. Thomas Lidflower (*Calyptranthes thomasiana*), Prickly Ash (*Zanthroxyllum thomasianum*) and Marron Bacora (*Solanum conocarpum*), which has been proposed for listing. Hogs will have a greatly reduced affect on 25 territorially threatened and endangered listed plant species.

Hogs will also no longer be preying upon one territorially endangered and threatened animal species, the Slipperyback Skink. Other territorial endangered species include ground-nesting species such as Bridled Quail Dove, Bahama Pintail Duck and West Indian Nighthawk, all of which will suffer a reduced egg and chick depredation due to hogs.

The U.S. Fish and Wildlife Service concurred with the NPS finding that the restoration program will not adversely affect any federally-listed threatened or endangered species or territorially listed endangered or rare species. (U.S. Fish and Wildlife Service Consultation Letter of July 15, 2002)

Effects to Wildlife

Great numbers of native fauna including several native bird, reptile and amphibian species and numerous insect and spider species will benefit from the reduction of hog populations. Because herptofauna and invertebrates are small, often slow and readily available, they are particularly susceptible to local extinction from hog depredation. Of particular concern are the varied native reptile and amphibian populations in the Park and their associated links in the food and ecological web of the island.

Effects to Wetlands and Floodplains

Wetlands and floodplains will be positively benefited by this program because great numbers of native fauna including several native bird, reptile and amphibian species and numerous insect and spider species will benefit from the reduction of hog populations that prey upon these wildlife when using wetland habitats. Because herptofauna and invertebrates are small, often slow and readily available, they are particularly susceptible to local extinction from hog depredation. Additionally, hogs forage on seedlings of the three mangrove species protected under V.I. law. Their rooting activities disturb soil surface layers and contribute to soil erosion and sedimentation in wetland areas.

Effects to Soils

Soil disturbing activities from hogs will notably decrease within three years of implementation of this alternative. Substantial hog reductions from throughout the Park will eventually allow disturbed areas to revegetate. New hog rooting areas will be prevented.

Eventually, erosion from previously disturbed sites will decline as revegetation occurs. As vegetation cover increases, overall watershed conditions will continue to improve. As watershed conditions

improve, runoff within the watershed will be reduced and absorbed by vegetation. This will cause less intense runoff events and decrease the rate of gully erosion (aggredation and widening). Less intense runoff events will cause less sediment delivery into local waterways and nearshore ocean waters where it can affect coral reef, mangrove, seagrass bed ecosystems and adjacent fisheries, nurseries and associated marine communities.

Effects of Chemical Immobilization Drugs

As described in the Wild Hogs Implementation Plan in Chapter II, the use of chemical immobilization drugs is not expected to produce any primary or secondary toxicity impacts to non-target wildlife. Because hogs are highly social animals, an animal equipped with a radio transmitter can lead field personnel to remote locations where hogs congregate (Taylor and Katahira 1988; White and Garrott 1990). This method of locating animal concentrations in steep slopes and dense underbrush can be an effective means to collect exotic hogs. Hogs used in this fashion are called Judas hogs. Before fitting an adult hog with a radio transmitter, the animal must first be captured and restrained through injection of chemical sedatives. The fastest, safest and most humane method to restrain hogs for attaching a radio collar is through chemical restraint. Standard large-animal restraint drugs will be used to temporarily sedate trapped wild hogs. USDA APHIS personnel have extensive training in the preparation and use of chemical restraint and immobilization drugs for large (and small) animals throughout North America (Kreeger 1997). Their experience includes many successful wild hog reduction programs.

Telazol is a combination of tiletamine and zolazepam and will be used in conjunction with Rompun to reduce nausea (Kreeger 1997). Swine are particularly susceptible to overheating and will be kept in the shade with provisions for wetting them down as necessary (IWVS, 1991). Intramuscular Telazol injections will be administered by either a jab stick, blow gun or CO2 pistol to captive individuals in corral or box traps. Fewer than five hogs will be collared in each watershed. Immobilization drugs and drug delivery equipment will be restricted to employees responsible for hog management under the direct field supervision of the program coordinators. These employees must have completed a Wildlife Immobilization Practitioner Course as required by NPS-77. Immobilization drugs will be stored in a locked safe and records will be maintained to include the date, amount used, purpose, and signature of the user. Since Telazol and Rompun are listed as a Class II substances, all guidelines for use and storage specified by the Drug Enforcement Administration will be followed (Fowler 1978). Radio-collared animals will be monitored at least twice a year to detect and remove ingress animals into the control units (Hegdal and Colvin 1986; Kurz and Marchinton 1972; Kreeger 1997). At the very end of the control program, the Judas hogs will be collected and Phase III monitoring will commence.

Effects to Vegetation

Impacts to native flora will be greatly reduced because fewer hogs will consume less native vegetation. Fewer seeds from exotic plant species will be dispersed in hog fecal matter. Hogs are voracious browsers of vegetation and prefer native plants because these plants evolved in isolation from large herbivores and lack defenses against these ungulates (e.g., spines, and toxins).

Hog impacts to the native island vegetation, including endemic and federally- and territorially listed plant species; will be reduced substantially in Maho, Cinnamon, Reef and Lameshur watersheds. Plant communities will readily benefit by seedling survival, increase of cover, biomass of native plant species, increased topsoil and water absorption.

Twenty-six long-term ecological monitoring sites (Weaver 1999) could be potentially fenced to exclude hog populations. Selection of which sites will be fenced will be determined by degree of present disturbance and proximity to sources of hog access into the Park. Valuable ecological data will be saved. Additionally, despite the current road and trail systems, the reduction teams might create trails between adjacent watersheds. These trails will be ephemeral and minimally used. These temporary trails are consistent with park use and management guidance. Impacts associated with the installation of trails are very minimal compared to the current impacts hogs are having on scenic values, cultural resources, public safety, soils, threatened and endangered species, vegetation, wildlife, water quality and wetlands. Trails and fencing will avoid any vegetation over one inch DBH and will consist of underbrush thinning sufficient to permit passage of humans or installation of fences. Vegetation will be allowed to regrow after fence installation to mitigate potential visual impacts.

Effects to Cultural Resources

Hogs will no longer continue to damage irreplaceable archeological sites and degrade the scientific importance of the St. John archeological record. This alternative will result in the most rapid reduction of hogs and, therefore, the least continued damage to cultural resources through hog disturbances on archeological sites. Hog rooting has already adversely affected the integrity of some of the island's National Register-listed archeological sites.

Impacts to the island's cultural resources by fencing and direct reduction operations are anticipated to be insignificant. The primary movement will take the form of foot traffic, and some may be near archeological sites. These areas are currently open to the public and risk destruction by hogs unless this alternative is taken. Impacts of this nature could be minimized by orienting the reduction groups to the sensitivity of these sites to damage and requesting that they avoid traffic over them whenever possible. Fences and trap locations will be assessed in advance using shovel-testing for any cultural resources concerns.

The State Historic Preservation Officer concurred that the proposed restoration program will not adversely affect any archaeological and cultural resources including submerged resources and historic structures (State Historic Preservation Office Consultation Letter of July 17, 2002). All comments were incorporated into the Final EA.

Socio-economic Effects

The proposed action to conduct Park-wide reduction of non-native hogs will have little or no negative impacts on socioeconomic issues but will have long-term positive impacts on the quality of the visitor experience. The long-term positive effects greatly outweigh potential short-term negative effects. Visitor use will possibly be slightly restricted on various portions of Federal lands during hog reduction operations.

The use of local volunteers to assist USDA APHIS in hog capture and removal will maintain a historic social custom of capturing and eating wild hogs. Hog reduction personnel will contribute financially to the local economy through purchases of goods and services, vehicle rental and equipment purchases.

Effects to Visitor Experience

The NPS will receive fewer complaints from visitors about the unacceptable behavior of aggressive wild hogs. The quality of the visitor experience will no longer be adversely affected by the presence of hogs or their impacts, which include evidence of rooting, occasional hog sighting and continued impacts to native wildlife.

Hogs will be much less dangerous to people in certain situations. There will be a reduced chance of them charging visitors and employees while hiking Park trails. Park trails will also be much safer due to lack of hog damage to the tread surface caused by hog rooting. Trail closures will be unnecessary. The tourist experience at VINP will be greatly improved.

Health and sanitation impacts will improve. Hogs will be less likely to serve as co-hosts with native wildlife and livestock for infectious and parasitic diseases.

Effects to Park Operations

The overall costs of administration of the non-native wildlife control program will be increased with the implementation of the first contract to remove exotic wildlife ($60,000 with the U.S. Department of Agriculture's Animal Plant Health Inspection Service / Wildlife Services Division). This alternative will have the lowest potential for adverse operational affects because hog populations will be greatly reduced, and held to low levels, throughout the Park at all visitor use, administrative, cultural and natural resources sites.

This program will necessitate an increase in on-contract island personnel and vehicles. Other transportation methods may be used including but not limited to horses, all terrain vehicles and boats. The proposed transportation methods are consistent with park use and management guidance. Despite the current road and trail systems, the hunting teams might create trails between adjacent watersheds. These trails will be ephemeral and minimally used. Existing structures, including government facilities, will be used for housing. Temporary tent camps may be established in remote areas. One-half to one and half-miles of fences will be constructed to restrict hog access to selected areas of the Park boundary. Fence installation will be entirely by hand. The Park archeologist will monitor any excavations for posts. Impacts associated with the installation of fences are very minimal compared to the current impacts hogs are having on scenic values, cultural resources, public safety, soils, threatened and endangered species, vegetation, wildlife, water quality and wetlands. Installation of fence material on NPS land will be conducted following consultation with hog farmers. Their assistance and cooperation will be solicited and encouraged throughout the ongoing hog reduction program. Enhanced community outreach will be an important and ongoing component.

A substantial reduction in hog populations will improve the safety for interpretative rangers leading guided Park hikes and eliminate a serious source of concern for the safety of their group. Maintenance of Park trails due to hog damage will be greatly reduced. Concerns for archeological/historical sites and required monitoring for damage will be greatly reduced.

NON-IMPAIRMENT OF PARK RESOURCES

After a review of the environmental impacts documented in the EA, the preferred alternative (i.e., the alternative selected for implementation) with proposed mitigation measures will not impair Park resources or values, including the opportunities that otherwise would be present for the enjoyment of these resources or values. The preferred alternative will not violate the NPS Organic Act.

FINDING OF NO SIGNIFICANT IMPACT

Based upon the EA, the consequences of the Proposed Action summarized above, and comments of agencies and the public, I have determined that Alternative 2 will not have significant effect on the quality of the human environment. Therefore, in accordance with the National Environmental Policy Act of 1969 and regulations of the Council on Environmental Quality (40 CFR 1508.9), an environmental impact statement will not be prepared.

Factors considered in making this finding include:

- The impacts resulting from the sustained reduction program will not impair any Park resources or value necessary to fulfill specific purposes identified in the Park's enabling legislation. The program will not violate the NPS Organic Act.

- No threatened or endangered species or critical habitats are likely to be adversely affected. (July 15, 2002 letter from U.S. Fish and Wildlife).

- The NPS provided information to the Territory's State Historic Preservation Officer with the determination that the project will not cause adverse effects on archaeological and cultural resources including submerged resources and historic structures (July 17, 2002, letter from State Historic Preservation Office). Comments were incorporated into the EA.

- The Plan of activities are consistent with the Coastal Zone Management Act and with the Coastal Zone Management Plan. NPS provided information to the Territory's Department of Planning and Natural Resources with the determination that the project is consistent with the Coastal Zone Management Act.

- The Plan of activities are consistent with NPS Management Policies and Natural Resources Management Guidelines, the General Management Plan (NPS 1983) and Resources Management Plan (NPS 1999) for the VINP, and applicable Federal and Territorial laws and regulations and will comply with Executive Orders 11988 and 11990.

- Reducing non-native wildlife populations will not have a significant impact on public health and safety or on consumers, minority groups, American Indians, women, or the civil rights of any person.

- Reducing non-native wildlife populations is not a unique activity and the effects on the quality of the human environment are not likely to be highly controversial, nor are they highly uncertain or involve unique or unknown risks.

Recommended: **John H. King** **2/12/03**
Superintendent, Virgin Islands National Park Date

Approved: **W. Thomas Brown** **4/9/03**
for Regional Director Date

ERRATA SHEET
SUSTAINED REDUCTION PLAN FOR NON-NATIVE WILD HOGS
WITHIN VIRGIN ISLANDS NATIONAL PARK
Virgin Islands National Park

COMMENTS AND RESPONSES

One written comment was submitted during the 42-day public comment period on the Draft EA for a Sustained Reduction Plan for Non-native Wild Hogs within VINP. Issues raised include: general comments of support; boundary fences installation and maintenance; use of hunting dogs to locate animals; and use of neck snares to trap animals.

1. General Comments of Support from The Humane Society of the United States

Comment: We understand that introduced species can negatively impact populations of indigenous species and that the impact to threatened and endangered species endemic to an island may be substantial. Quite often, The Humane Society of the United States is concerned that the eradication of a non-native species may be unsuccessful, can result in unnecessary suffering of the target animals, and may also negatively affect non-target species. In a closed ecosystem such as on an island, on the other hand, it may be both feasible and necessary to remove non-native species to protect sensitive native species. While we do not oppose the overall goal to reduce – and preferably eliminate – introduced hogs from the Park, we have two primary concerns with the proposed alternative: boundary fence installation and maintenance; and use of hunting dogs to locate animals.

Response: The NPS has modified the Wild Hogs Implementation Plan in Chapter II of the Final EA to address these concerns by The Humane Society of the United States.

2. Boundary Fences Installation and Maintenance

Comment: First, we are concerned that half of St. John, including 25% of the Park, is comprised of privately owned land and that the National Park Service (NPS) is apparently resigned to conducting ongoing hog control over an indefinite period of time. In particular, the EA indicates (pg.13) that most of the hogs on the island are owned by one landowner who apparently either does not keep the hogs in an enclosed area or, for some unexplained reason, does not maintain her/his fences. This suggests that the proposed reduction will be more successful -- and could potentially result in reduced pain and suffering of target animals, as well as reduced impact on non-target species – if the effects of private hog owners were more directly addressed in the hog reduction plan. It will seem that an obvious solution will be to ensure private landowners properly house their domestic animals to eliminate the flow of escaped hogs into the Park and elsewhere on the island. Perhaps volunteers recruited to assist in hog control efforts could also construct fencing for private landowners such that any domestically owned hogs are entirely enclosed. I realize that this is addressed to some extent in the EA (pg. 27 "community outreach;" also in II.A.2 "fence-zone-removal") but to really accomplish the goal of changing private landowners' husbandry practices – and eliminating ingress and egress of hogs between private property and the Park – it may be necessary to go one step further and assist in the design and construction of livestock fencing and housing. This type of proactive effort could make it possible to remove all hogs from the Park-owned

portion of the island, or could at least make the reduction more likely to achieve the desired result of reducing negative impacts on native species.

Response. The NPS has modified the Wild Hogs Implementation Plan in Chapter II on Page 19 of the Final EA to address these concerns about installation and maintenance of boundary fences. Ungulate-proof fences will be considered for installation to restrict their access to Parklands immediately adjacent to Herman Farm, L' Esperance and Catherineberg, where new animals can easily enter the Park. Where necessary, free-access, ungulate-proof gates will be installed and maintained. Fencing these specific areas will greatly reduce the ingress of hogs to Park land and reduce long-term monitoring and population reduction efforts necessary to maintain near-zero population levels.

Chapter II has been modified to include: "Installation of fence material will be conducted following consultation with hog farmers. Their assistance and cooperation will be solicited and encouraged throughout the ongoing hog reduction program. Enhanced community outreach will be an important and ongoing component, as well."

Response. The NPS has modified the Wild Hogs Implementation Plan in Chapter II on Page 19 of the Final EA to address concerns about the use of volunteers. The Volunteers-In Parks (VIP) program will be used to involve a limited number of residents to share their knowledge and hunting skills and labor to assist with specific hog collection activities. Local knowledge will be gathered from island residents regarding trap design and manufacture and placement, seasonality, timing and bait choice. This program responds to a cultural tradition that includes a long history of hogs on the island and what is known archaeologically about enslaved Afro-Americans, and others, supplementing their diets (at least in some areas of the Americas) through hunting, fishing, and trapping.

VIPs will participate under the exclusive direction and authority of the Park Superintendent (or designee); such VIPs will be prohibited from using firearms and must participate within the strict guidelines established by the NPS and USDA Program Coordinators.

Chapter II has been modified to include: "Volunteers (VIPs) may be used to install and maintain fences near the VINP boundary."

3. Use of Hunting Dogs to Locate Animals

Comment: Second, we do not consider the use of dogs in hunting or the use of neck snares in trapping to be humane methods of killing hogs. It is not clear in the EA whether the dogs to be used are trained only to track the hog or whether they are likely to physically contact the hog (as in "catch dogs"). Dogs that are likely to come into physical contact with the hogs may cause unnecessary suffering for the hog and may, additionally, be injured themselves. The NPS should explain in the final EA the likelihood of injury to hogs and dogs during control activities. In addition, the NPS should indicate whether other hog eradication projects have been successful without the use of dogs; this will allow the public to determine more accurately whether this method is truly necessary. Finally, the final EA should indicate the likelihood of damage to native (non-target) ground nesting birds. We urge the NPS to consider an alternative in which dogs will not be used to hunt hogs.

Response: The NPS has modified the Wild Hogs Implementation Plan in Chapter II on Page 21 of the Final EA to address these concerns about the use of dogs to locate animals. Use of well-trained and

experienced tracking dogs ("baying") can be extremely cost effective when seeking to remove a small number of remaining, trap-shy individuals. Use of dogs will only be considered in humanely collecting individuals where other alternatives have failed. The removal of every possible hog from remote densely vegetated locations may require the use of trained tracking dogs. These specialized animals will be brought in from the U.S. mainland and maintained under strict control at all times. Dogs will be under the control and guidance of USDA Program Coordinators and visitor safety will be foremost in all operations.

Chapter II has been modified to include: "Every successful NPS hog reduction program on an island or in a mainland environment has relied upon the use of tracking dogs to locate the last remaining hogs. Tracking or catch dogs are being used at Great Smoky Mountains, Hawaii Volcanoes and Channel Islands national parks to locate the last hog in steep terrain, and in dense brush and forest. Only if a decision or the opportunity to capture the "last hog" is made will VIIS use tracking ("baying") dogs, and only under the guidelines stated above. They will only be used to locate hogs and not contact the hogs. As they will be under strict control at all times, they will produce no impacts to ground-nesting birds."

4. Use of Neck Snares to Trap Animals

Comment: Neck snares are referred in the EA as "live traps" in the sense that "the majority of trapped animals . . . are found alive (pg. 22)." While this may be the case, the EA does not address the potential for neck snares to cause injury or, potentially, an inhumane death. We recognize that the use of live capture (single-catch and corral) traps may also have the potential to cause injury to trapped animals. However, there is reason to believe that the physiological stress responses elicited by capture via a live (cage) trap is significantly less than that elicited in animals in restraining traps. To the extent that stressed animals may be more likely to struggle and become injured in a restraining trap, we are concerned that this may in fact occur regularly if neck snares are used to capture feral hogs in the Park. Therefore, we urge NPS to consider an alternative in which neck snares are not employed for feral hog control.

Response: The NPS has modified the Wild Hogs Implementation Plan in Chapter II on Page 22 of the Final EA to address these concerns about the use of neck snares. The live capture and leg snares proposed for use in this program is relatively species specific. Moreover, they are widely considered live traps, which means the majority of trapped animals and especially the targeted species, are found alive. These methods are more expensive to obtain and use, but are preferred over neck snares or kill traps, because they are more humane when used properly. The nontarget wildlife that might become incidental targets includes the following non-native species: white-tailed deer, goats, sheep and burros. Few if any of these species are expected to be found in the traps or leg snares. Capture of burros or deer will be extremely rare and those will be released. Other non-native species will be humanely collected.

Only if all else fails will neck snares be used. They will be constructed using slip-wire and secured close to the ground along established corridors frequented by hogs and remote from human activity. Wildlife conservationists consider these to be live traps for virtually all targeted wildlife captured. However, white-tailed deer sometimes behave erratically and may readily suffocate and quickly (and humanely) die. Capture and release or disposition of nontarget wildlife is addressed in a separate section immediately above.

Chapter II has been modified to include: "Both target and non-target species are generally found uninjured or only moderately injured in the snare. A minor amount of injury is impossible to avoid, while

every reasonable measure will be employed to reduce injury and suffering of both target and incidental wildlife captured throughout the reduction program."

Response: Initially, traps and snares represent the highest number of animals collected for the least amount of human effort. Therefore, a few different models or techniques will be employed to collect hogs, including single and multiple (corral) live traps, drop nets, and snares. Trap success is a function of natural food availability, environmental conditions, hog densities and distribution, trap placement, trap design, age and previous trapping activity (Fox and Pelton 1977). Portable, chain-link single-catch traps have been the most practical and efficient traps for capturing wild hogs in many areas. These may be constructed for remote use in this program, in addition to the multiple-catch corral trap envisioned to capture the majority of trapped hogs in this program. Live-capture traps may be assembled in the field and dismantled for movement to a new site. While live capture traps are more expensive to obtain and use, they are preferred over kill traps.

Guidelines for trapping wild hogs include:

1. Trap inspection within 12 hours maximum,
2. Trap placement remote from visitors,
3. Plot trap locations on topographic maps using global positioning system (GPS),
4. Carcass disposition away from visitor access areas, and
5. Coordinate trapping efforts through the Resource Management office.

Rigid, heavy gauge welded wire panels measuring 4 x 8 feet will be wired together and fastened to an independent, one-way door. Three panels form a triangular corral trap capable of holding several animals.

Although trapping is an effective method of control and can account for the majority of hogs removed from a Park, it has some limitations. For example, some animals may be "trap shy" and may not enter traps regardless of bait type or trap location. In addition, it is difficult to transport traps to some areas of the Park due to the remote and rugged terrain or without causing serious impacts to natural resources. Finally, in terms of man-hours, trapping is very labor-intensive. Therefore, the most cost-effective method for controlling wild hogs in the Park is a combination of trapping and shooting.

Live traps are the preferred method of capture; leg snares will be used in conjunction with independent bait stations. Traps and leg snares will be inspected at maximum 12-hour intervals. Initial trapping typically yield the highest ratio of animals collected over time, and this drops over time until the program is no longer cost effective.